

REMARKS

Claims 1-82 are currently pending in this application. Claims 12-16, 18-21, 24-27, 29-32, 35-50, 54-58, 60-63, 66-69, 71-74 and 77-80 were withdrawn due to a previous restriction requirement. Claims 1 and 51 are currently amended. Claims 2, 3, 10, 11, 17, 22-23, 28, 33-34, 52-53, 59, 64-65, 70, 75-76 are original. Claims 5-9 are previously presented. Claim 4 was canceled. Claims 82 and 82 are new. No new matter is added. Claims 1-3, 5-11, 17, 22-23, 28, 33-34, 51-53, 59, 64-65, 70, 75-76 stand rejected under U.S.C. §102(b) as being anticipated by U.S. Patent no. 5,865,051 to Otzen et al. (referred to herein after as "Otzen"). Applicants hereby traverse the rejection and respectfully request reconsideration in view of the remarks set forth below.

New claim 81 is directed towards an apparatus for manufacturing coil spring from a wire having a coil spring winder and a wire holder. The wire holder is driven in synchronized operation with the coil winder, for periodically starting and stopping the inward supply of water. New claim 82 is directed towards an apparatus for manufacturing coil spring from a wire having a coil spring winder, a wire holder and a tension sensor for measuring longitudinal tension along the wire. Claims 81 and 82 are fully supported by the originally filed specification including the originally filed claims. Applicants have reviewed Otzen carefully and have found no teaching or suggestion for synchronizing the motion of the wire holder with the coiler, or a tension sensor for measuring longitudinal tension along the wire.

I. Applicants' claims patentably distinguish over Otzen because Otzen does not disclose a wireholder having a multistranded wire.

As stated in the MPEP §2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Currently amended independent claim 1 recites an apparatus for manufacturing a coil spring. The apparatus includes a wire-holder having a multistranded wire, a coil-spring winder, and a coupling. The coil-spring winder forms the wire into a coil having a plurality of turns. The wire-holder is configured to supply the wire to the coil-spring winder along a feed direction. The wire-holder is supported for rotation about a holding axis by a coupling. The coupling is configured such that it allows the wire holder to rotate about the holding axis in response to a torque acting about a cross section of the wire. The rotation of the wire holder substantially reduces the torque on the multistranded wire. Support for the amendments can be found in at least Figure 2, and pages 8 and 9 of the originally filed specification. No new matter is added.

Otzen does not describe a wire holder having a wire comprising a plurality of strands. The wire in Otzen is a single strand wire formed in the "interior of a furnace" through a "stretching and tapering process." Otzen's apparatus is then used for "correction of the wire diameter fluctuations" caused by reduced tensions in the wire formed during a "hardening process at 860C." *See Col. 3, Lines 14-21.* Therefore, Otzen does not describe all the elements of amended claim 1 as is required by MPEP §2131 to make a proper rejection under §102.

II. Because Otzen does not teach or even suggest a multistranded wire, it does not contemplate stresses generated by these multistranded wires.

Otzen is directed to an apparatus for compensating the elastic torsion stresses of a wire. These torsional stresses in the wire are generated inherently in the material or geometry, or during a stage in the manufacture of the material of the wire. *See Col. 1, Lines 25-30.* Otzen explicitly states that these "torsion stresses" are not visible from outside because the wire is coiled under tension. *See Col. 2, Lines 65-66.* The torsion stresses are released when this compulsion [of tightly coiled wire] is taken away from the wire. These torsional stresses are stresses on a single stranded wire.

Since Otzen does not describe multistranded wires, it does not even contemplate particular issues with uncoiling twisted multistranded wire that the Applicants have identified and overcome with the claimed invention. In particular, as noted in the Specification in Paragraph 0033 on Page 7, the exterior surface of a twisted multistrand wire is knurled. As the wire is being uncoiled, the knurled exterior surface of the wire has a tendency to turn or torque the wire, thereby imparting rotational torque on the wire. This torque can build up and cause the wire to fray or fracture. In fact, while uncoiling, the twisted multistrand wire acts like a leadscrew capable of generating very high amounts of torque not generated in a single strand wire. This torque due to the knurled exterior surface creates additional stresses on the wire over and above the typical stresses on each of the plurality of single strands that Otzen describes.

III. Otzen's apparatus and methods cannot substantially reduce the torque due to the knurled exterior surface of the twisted multistranded wire.

The Office Action, on page 3, states that "the apparatus of Otzen is capable of utilizing the claimed type wire." Applicants respectfully disagree. Otzen's system is incapable of substantially reducing torque on a twisted multistranded wire because it does not include a coupling as recited in the claims. In Otzen, the torsional stress variations are measured by changes in vertical displacement of a loop of the wire. When a "recognition unit E1" sees a deviation in the vertical displacement of the looped wire, it directs a "separate control unit" to turn the spool along bearing L3. This subsequently helps reduce the torsional stress in the wire. *See Col. 4, Lines 25-28.* Otzen's system is designed to react to small torsional stresses that exist in single strand wires, not the larger and more variable torsional stresses in multistranded wires. A sensitive sensor and control unit such as Otzen's uncoiling device is not configured to compensate for the large and variable torque from twisted multistranded wire. The claimed invention overcomes these problems with the use of a coupling that allows the wire holder to rotate depending on the amount of torque generated. Otzen does not disclose such a coupling recited in the claims. Accordingly, Otzen does not describe all the elements of amended claim 1 as is required by MPEP §2131 to make a proper rejection under §102.

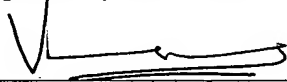
Applicants therefore request reconsideration and withdrawal of the rejection of independent claim 1. Claims 2-11, 17, 22-23, 28 and 33-34 depend from claim 1 and add further limitations thereto. Thus, Applicants request reconsideration and withdrawal of the rejections of these claims as well. Independent claim 51 includes similar subject matter. Claims 52-53, 59, 64-65, 70 and 75-76 depend from independent claim 51. Applicants respectfully request reconsideration and withdrawal of the §102 rejections of these claims, as well.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

We believe we have appropriately provided for fees due. However, if there are any other fees due in connection with the filing of this submission, please charge the fees to our Deposit Account No. 18-1945, under Order No. SMCY-P01-101 from which the undersigned is authorized to draw.

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Respectfully submitted,

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